

1. Scope :

This specification applies to NPN silicon photodarlington chips,
Device No. ST-0111A.

2. Structure :

- 2-1. Planar type.
- 2-2. Electrodes :
 - N (Collector) side : Gold alloy.
 - P (Base) side : Aluminum alloy.
 - N (Emitter) side : Aluminum alloy.

3. Size :

- 3-1. Chip size : 40 mils × 60 mils (1.016 mm × 1.524 mm).
- 3-2. Chip thickness : 12.0 ± 1.5 mils (0.305 ± 0.038 mm).
- 3-3. Active area : 25 ± 0.4 mils × 27 ± 0.4 mils (0.6 ± 0.02 mm × 0.7 ± 0.02 mm).
- 3-4. Bonding pad : (7 ± 0.4) mils × (6 ± 0.4) mils (0.185 ± 0.01) mm × (0.165 ± 0.01) mm.
- 3-5. Pattern drawing : refer to the attached drawing.

*Including scribing line .The chip size is about (0.991±0.025)×(0.1499± 0.025)mm² after dicing.

4. Electrical characteristics (Ta = 25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector-emitter Breakdown Voltage	BV _{CEO}	I _C =100μA	300			V
Collector dark current	I _{CEO}	V _{CE} =200V H=0mw/cm ²			100	nA
Collector-emitter Saturation Voltage	V _{CE(S)}	I _C =100mA I _B =5mA			1.5	V
Rise/fall time	t _R /t _F	V _{CE} =5V I _C =10mA R _L =100Ω		100/100		μS
Current gain	h _{FE}	V _{CE} =5V I _C =20mA	2500		100000	

hFE RANK A : 2500 - 10000
RANK B : 5000 - 20000
RANK C : 10000 - 30000
RANK D : 25000 - 100000

